

Claims:

1. (Original) A method of detaching a nucleic acid molecule from a solid support to which it is attached, wherein an unconventional nucleotide is incorporated at a predetermined site in said nucleic acid molecule, said method comprising selectively cleaving said nucleic acid molecule at the site of said unconventional nucleotide, wherein said selective cleavage is accomplished enzymically.

2. (Previously amended) A method of reversibly immobilising a nucleic acid molecule, said method comprising:

(a) incorporating an unconventional nucleotide into said nucleic acid molecule at a pre-determined site;

(b) binding said nucleic acid molecule to a solid support; steps (a) and (b) being carried out in either order or simultaneously; and subsequently

(c) selectively cleaving said nucleic acid molecule at the site of said unconventional nucleotide, wherein said selective cleavage is accomplished enzymically.

3. (Original) A method as claimed in claim 1 or claim 2 wherein said nucleic acid molecule is a chimeric molecule comprising a nucleic acid component and another non-nucleic acid component.

4. (Previously amended) A method as claimed in claim 1 or 2, wherein the unconventional nucleotide is uracil, hypoxanthine, a ribonucleotide, -7 methylguanine, 8-oxoguanine, deoxyuridine, deoxyinosine, deoxy 5,6-dihydroxythimine, 5'6'-dihydroxythine, deoxy 3'-methyladenosine or 3'-methyladenosine.

5. (Previously amended) A method as claimed in claim 1 or 2, wherein said selective cleavage is achieved using a DNA glycosylase enzyme.

6. (Previously amended) A method as claimed in claim 1 or 2, wherein said nucleic acid molecule comprises DNA, said unconventional nucleotide is uracil (U), and selective cleavage is achieved using a uracil DNA glycosylase enzyme (UDG).

7. (Previously amended) A method as claimed in claim 1 or 2, wherein said unconventional nucleotide is incorporated into said nucleic acid molecule as part of a linker sequence.

8. (Original) A method as claimed in claim 7 wherein said linker sequence is a primer.

9. (Previously amended) A method as claimed in claim 1 or 2, wherein said nucleic acid molecule is a primer extension product.

10. (Previously amended) A method as claimed in claim 1 or 2, wherein said support is a magnetic bead.

11. (Previously amended) A method as claimed in claim 7, wherein said linker sequence is provided with means for immobilization to a solid support.

12. (Previously amended) A method as claimed in claim 9, wherein said nucleic acid molecule is a cDNA, or a product of an *in vitro* amplification reaction or a sequencing reaction.

13. (Previously amended) A method as claimed in claim 7, wherein said nucleic acid molecule comprises a linker sequence coupled to a protein, an enzyme substrate, a receptor ligand, an antigen or hapten, or a fragment thereof, or to an affinity binding group or a reporter group.

14. (Currently amended) A method of preparing a construct for binding to, and subsequent cleavage from, a solid support, said method comprising incorporating into said construct a nucleotide linker sequence comprising at a predetermined site an unconventional nucleotide capable of selective cleavage using ~~an~~ a glycosylase enzyme.

15. (Currently amended) A chimeric molecule comprising a nucleotide linker sequence comprising at a pre-determined site an unconventional nucleotide capable of selective cleavage using ~~an~~ a glycosylase enzyme, coupled to a functional group.

16. (Original) A chimeric molecule as claimed in claim 15, wherein said functional group is an affinity binding group or a reporter group.

17. (Previously amended) A method as claimed in claim 14, wherein said linker sequence is immobilized or provided with means for immobilization to a solid support.

18. (Previously amended) A chimeric molecule as claimed in claim 16 wherein said affinity binding group is an antibody or a fragment or derivative thereof, or a hapten.

19. (Currently amended) A method for separating a target cell from a sample, said method comprising binding said target cell to a solid support by means of a chimeric molecule comprising a nucleotide linker sequence comprising a selectively cleavable unconventional nucleotide at a pre-determined site, coupled to a functional group, ~~preferably as defined in claim 15~~, wherein said functional group is an affinity binding group which binds specifically to said cell.

20. (Currently amended) A method of detaching a nucleic acid molecule from a solid support to which it is attached, wherein an unconventional nucleotide is incorporated a predetermined site in said nucleic acid molecule, said method comprising selectively cleaving said nucleic acid molecule at the site of said unconventional nucleotide, or of reversibly immobilizing a nucleic acid molecule, said method comprising:

(a) incorporating an unconventional nucleotide into said nucleic acid molecule at a pre-determined site;

(b) binding said nucleic acid molecule to a solid support; steps (a) and (b) being carried out in either order or simultaneously; and subsequently

(c) selectively cleaving said nucleic acid molecule at the site of said unconventional nucleotide, ~~preferably as claimed in claim 1 or 2~~, or a method as claimed in claim 19,

wherein a multiplicity of different nucleic acid molecules or chimeric molecules comprising a nucleotide linker sequence comprising a selectively cleavable unconventional nucleotide at a pre-determined site, coupled to a functional group, are attached or bound to a solid support, each said different molecule incorporating a different unconventional nucleotide.

21. (Previously amended) A kit for use in a method as defined in claim 1 or 2, said kit comprising

(a) means for introducing an unconventional nucleotide into a nucleic acid molecule; and

(b) means for selective cleavage of said unconventional nucleotide, wherein said means is an enzyme.

22. (Currently amended) A poly- or oligonucleotide incorporating an unconventional nucleotide which is selectively cleavable using ~~an~~ a glycosylase enzyme, immobilized on a solid support or carrying means for immobilization.

23. (Original) A poly- or oligonucleotide as claimed in claim 22, being poly- or oligo dU.

24. (Original) A poly- or oligonucleotide according to claim 22 being a primer.

25. (Previously amended) A poly- or oligonucleotide as claimed in claim 22, wherein said means for immobilization is biotin.

26. (Previously amended) A poly- or oligonucleotide as claimed in claim 22, wherein said solid support comprises magnetic beads.

27. (Previously amended) A multiplicity of olig- or polynucleotides as defined in claim 22, wherein each different oligo- or polynucleotide incorporates a different unconventional nucleotide.

28. (Currently amended) A method as claimed in ~~a chimeric molecule as claimed in claim 15 or 16~~, wherein said linker sequence is immobilized or provided with means for immobilization to a solid support.

29. (New) A method for separating a target cell from a sample, said method comprising binding said target cell to a solid support by means of a chimeric molecule comprising a nucleotide linker sequence comprising a selectively cleavable unconventional nucleotide at a pre-determined site, coupled to a functional group, as defined in claim 15, wherein said functional group is an affinity binding group which binds specifically to said cell.